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ABSTRACT

This study was designed to improve spelling performance of 17 mainstreamed elementary special education students by developing self-regulatory mechanisms and by training the regular classroom teacher and parents in ways to meet the handicapped student's learning needs. A variety of intervention techniques was employed including homework strategies, motivational techniques, parental encouragement, and peer tutoring. Findings indicated improved spelling performance which was further improved by monitoring cognitive strategies. Two ancillary findings indicated that same-age tutoring was most effective with primary children and that well structured activities were most effective in improving spelling performance. Students lost skills over summer recess but quickly regained proficiency following remedial instruction. Data also suggested that learning disabled students' cognitive ability influenced spelling and metacognitive gains. Appended are a sample error chart, sample spelling activities, the response cost coupon and menu, learning strategy cartoons, the parent telephone interview, and pre- and post-tests used. Includes 58 references. (DB)

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Increasing Spelling Performance With Learning Disabled
Students By Teaching Metacognitive Strategies

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by

Stephan Loper

Cluster 26 B

A Practicum II Report Presented to the Ed.D Program
in Early and Middle Childhood
In Partial Fulfillment of the Requirements
for the Degree of Doctor of Education

Nova University

1989

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PRACTICUM APPROVAL SHEET

This practicum took place as described.

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This practicum report was submitted by Stephen Loper under the direction of the adviser listed below. It was submitted to the Ed.D. Program in Early and Middle Childhood and approved in partial fulfillment of the requirements for the degree of Doctor of Education at Nova University.

Approved:

3-8-90

Date of Final Approval of
Report

Polly Peterson, Ph.D.
Dr. Polly Peterson, Adviser

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ABSTRACT

Increasing Spelling Performance With Learning Disabled Students By Teaching Metacognitive Strategies. Loper, Stephen G., 1989. Practicum Report. Nova University, Ed.D. Program in Early and Middle Childhood. Descriptors: Spelling/Metacognition/Memory/Imaging/Visualization/Classroom Techniques/Transfer of Training/Peer Tutors/In-Service Teacher Education/Peer Modeling/Teacher Education/Cognitive Processes/Special Education/Program Effectiveness/Parent Involvement/Homework/Mainstreaming.

This practicum was designed to improve the spelling performance of mainstreamed special education students and to assist teachers/parents in meeting the learning needs of those children. The primary goal was to improve spelling performance by developing self-regulatory mechanisms with elementary learning disabled students. A second aim was to train the regular classroom teacher and parents of those students in how to meet the learning needs of the handicapped student.

The writer administered a needs assessment survey to teachers, determined the extent of spelling problems exhibited by the mainstreamed students, planned and conducted in-service sessions with regular classroom teachers, supervised and maintained the program, developed lines of communication with parents, and developed and administered an evaluation component.

The relationship of the identification of spelling problems and remediation strategies for instruction was examined in 15 elementary learning disabled students attending a resource room. While findings illustrated that learning disabled students' spelling performance could improve with proper instruction, data also suggested that monitoring cognitive strategies could accelerate gains. Results demonstrated that various homework strategies, motivation, and parental encouragement could reinforce skills taught in school. Teacher surveys completed at the end of the program indicated classroom teachers benefited from contact with the resource room teacher, and that there were relatively distinct differences in their approaches to teaching spelling to learning disabled students. Research indicated the viability of peer tutoring programs. Two ancillary findings of this practicum indicated same-age tutoring was most effective with primary children, and that well structured activities were most effective in improving spelling performance. Analysis to determine the effects of training revealed that students lost skills over summer recess but quickly regained proficiency following remedial instruction. Finally, data suggested that learning disabled students' cognitive ability influenced spelling and metacognitive gains.

CHAPTER I

INTRODUCTION

Description of Community

The setting for the school practicum was an urban community with a population of under 40,000 people, on the east coast of the United States. Composed of a mixture of hispanic, black, oriental, and middle-class whites, the city is further defined by distinctive cultural neighborhoods.

The community is on a barrier island of approximately eight square miles with beaches that are heavily used for recreational purposes. The northwestern portion of the island is a residential area bordered by a major thoroughfare leading into the city. The school site in which the practicum took place is on that boulevard. Surrounded by a stadium to the north, and lower-income housing to the southwest, the school is bordered by middle-class single family dwellings on the west.

The district policy of open city wide enrollment, along with the relative newness of the school structure, has helped to create a school site whose population is representative of the community at large.

Along with the traditional attractions which make the community a tourist destination is the added development of the casino gaming industry. Currently the most visited resort in the country, the city hosts nearly 30 million tourists per year, including approximately 1600 conventions with nearly a half million attendees. The majority of the tourists use bus

transportation in and out of the city on a daily basis.

For the past ten years, the community has attempted to deal with the transition of a seasonal to year round economy. The effects of increased automobile and bus traffic, declining city population and lack of adequate housing have all contributed to changing residential neighborhoods and mass relocations of sectors of the population.

Upper middle-class families are moving to neighboring mainland communities while real estate speculators have contributed to a decrease in apartment rental units. Although some construction of low and middle income housing has begun in the past two years, city and county planners forecast a shortage for a number of years.

All of these factors mentioned have helped to impact on the increase in crime experienced in the city.

Writer's Work Setting

The open space school was built in 1975 as part of a district public school building program which began in the 1960's. The student population numbers 652 and consists of children from all areas of the city. The majority are residents of the surrounding neighborhood. Although the enrollment is diverse in socio-economic levels, the majority of the students are middle to lower-class.

The school administrative team includes a principal and vice-principal who are responsible for directing the academic program and acting as curriculum coordinators. They ensure that

the day to day activities of the school comply with district policies. A third member of the team is the community coordinator who directs all phases of the after school activities on the site.

Faculty representation in the school is varied in terms of age, race, religion, and sex. Since the opening of the school thirteen years ago, the rate of teacher turnover has been high. The majority of teachers who left the school did so for personal reasons and left the district entirely. Others transferred within the school district to self-contained classrooms. In 1988, three teachers left the school. Salaries in the district are among the highest in the state as a result of casinos increasing the property values within the city.

The facility is one of two open space schools. Classrooms are comprised of small movable tables and cabinets arranged to fit a variety of activities. The learning pods are without walls between designated classroom areas. Teachers move around the areas giving individual or small group instruction.

The educational philosophy reflects an approach to education which maintains that children can be motivated to learn at their own pace by self-directed activities. The teacher's role is to guide the student in academic activities throughout the day.

The faculty is organized into three instructional teams. The teams consist of: primary, which includes kindergarten, first, and second grades; intermediate, with third and fourth grades; and upper, with fifth and sixth grades. Each team has a

leader who is responsible for ensuring that the skills taught are appropriate for the students' educational level, as well as handling administrative duties.

Many ancillary services supplement the academic program of the facility. These include compensatory education, chapter one, and special education. Special teachers coordinate instructional objectives in the areas of music, media, art, physical education, swimming, and industrial arts. All of these areas of instruction follow district educational goals.

The facility offers many services to the community including an after school program for children consisting of, but not limited to: reading tutoring, roller skating, basketball, and swimming. Activities are designed and implemented by age categories. Community services at the school offer adult medical clinics, dental clinics, senior citizen home economics, basketball, swimming, and special programming utilizing guest speakers from the area. A large portion of the evening educational programs focuses on the arts.

The Writer's Role and Responsibility

The writer is currently employed as a resource room teacher working directly with administrators, teachers, parents, and students. Teaching responsibilities stipulate 20 mainstreamed special education students from age 6 to 12.

Responsibilities include planning educational programs, attending parent conferences, and working closely with the child study team to ensure that programs designed for the

mainstreamed students are effective. The writer directs all programming in the resource room and assists the regular classroom teacher in creating appropriate activities to meet students' individual needs. A meeting with the classroom teacher is scheduled once a month to discuss student progress.

One area of the writer's expertise is screening special education referrals to evaluate the needs of the student. Responsibilities include outlining appropriate services based on the current social and academic performance of the child.

In addition, the writer has been active in a variety of school functions over the past 14 years. The writer is Chairperson of the School Effectiveness Program and is responsible for scheduling school functions and designing workshops for curriculum improvement at the facility.

Educational experience includes an undergraduate degree in liberal arts, a master's degree in administration and supervision, and certification as teacher of the handicapped. The writer's past experience with junior high and elementary special education has been an asset in planning the programs in the resource room.

CHAPTER II

STUDY OF THE PROBLEM

Problem Description

The school in which this practicum took place mainstreams learning disabled special education students into the regular classroom setting. The program is a direct result of the passage of Public Law 94-142 in 1975 requiring that all special education students be educated in the least restrictive environment. The term least restrictive means students are not removed from regular class participation any more than necessary. Thus, handicapped pupils join in the variety of educational programs and services available to non-handicapped pupils.

Historically, learning disabled students were pulled out of the regular classroom and placed in a special education classroom the entire day. Mainstreaming is based on the belief in the least restrictive environment by having students spend part of their day in the regular classroom setting. The school in which this practicum took place assigned the learning disabled students to attend the resource room for one hour a day and the remainder of the school day was spent in the regular classroom.

The resource room was designed to service learning disabled children. The program for the handicapped student was based on the Individual Educational Plan, a specific long and short term set of goals for the student. While in the resource

room each student received instruction in two specific areas. The first was the particular subject missed in the regular classroom and the second was instruction designed to address the Individual Educational Plan. The goal of the program was the successful mainstreaming of the learning disabled student into the regular classroom.

The special education student spent the majority of the day in the regular classroom. Each classroom teacher was required to teach all subjects to the learning disabled student during the time he/she spent in the class. The mainstreamed student followed the schedule of the class by attending all special subjects and eating lunch with peers. District educators believe that being with one's normal peers will help reduce the stigma of being learning disabled.

A monthly conference was required between the resource teacher and the classroom teacher to discuss student progress. The resource teacher was expected to assist the classroom teacher in meeting the needs of the learning disabled student while in the regular classroom. Monthly conferences were designed to foster communication between the teachers.

On the surface it seemed the learning disabled student was being mainstreamed without much difficulty. The resource teacher served as a consultant to the child's regular teacher. The pupil's instructional needs were addressed in the regular classroom and each student had the opportunity to participate in all the services his/her peers received.

However, many teachers had recognized problems with the learning disabled students in their regular classroom. Most students had difficulty with spelling words correctly during classroom activities. At times, the students became frustrated during lessons that would require them to spell correctly. They had difficulty understanding letter-sound relationships, dictionary usage, word-attack principles, the fact that unstressed syllables are difficult to spell phonetically, and as a result, just simply lacked the desire to spell words correctly. Teachers had recognized that the learning disabled students were not aware of what strategies and resources were needed to perform spelling tasks effectively or would not use self-regulatory mechanisms to successfully complete an assignment.

Some portion of the resource room program was not contributing in a manner which allowed the learning disabled student to perform spelling tasks successfully. If it were, then a learning disabled student would be able to spell better during writing endeavors. The student would have been aware of strategies that could improve their performance and self-regulatory mechanisms that would ensure more successful spelling.

The difficulties encountered by the regular classroom teacher were complex and they had tried a number of solutions to improve the students' spelling performance, but met with little or no success.

In the open space setting, groups of four or five students sit at a table and one solution attempted was to have the

learning disabled student sit alone in order to reduce distractions. However, the student usually became distracted by others sitting at tables close by. The hope was that by separating the child, he/she would not be as distracted by peers. Unfortunately, the child would fail to complete lessons or else leave the seat and move around the instructional area. The teachers found it difficult to supervise the student while giving small group instruction.

Another solution attempted was having the mainstreamed student make spelling flash cards and practice with another classmate. However, the learning disabled student would either lose the cards or just sit talking to the other student. This original solution became disruptive to the teacher and had to be discontinued.

Many teachers used homework as a technique to reinforce spelling skills. The learning disabled students were given the same assignments as their classmates but usually were unable to return them because they were lost or forgotten.

As a result of students' poor performance in class, teachers had phoned parents to request conferences. This solution had been effective with some students, but not others. Many parents worked for the city's major employers on shift hours, making it difficult to contact them. Some of the students came from economically disadvantaged families and this was another factor contributing to limited parental support.

Another solution tried by the regular classroom teacher was to reinforce word attack skills. Teachers taught the students dictionary use, phonetic skills, and how to identify

syllables, as well as telling the student why he/she should try to spell words correctly. The solution had met with limited success but teachers felt the students were unable to use self-regulatory mechanisms that would achieve the desired results.

The resource room had been used in an attempt to solve the problem. Students worked on reading skills while in the room and part of this instruction involved vocabulary development. However, the resource room teacher did not teach spelling as a subject to learning disabled youngsters. This part of the academic program was taught by the regular classroom teacher.

A final solution that had been tried was computerized individual instruction. Learning disabled students were able to use the computer to play spelling games, but many of the games were not geared to the students' level of functioning. The teachers had the students work with peers but this often resulted in arguments and was discontinued.

In conclusion, the problem addressed by this practicum was that elementary learning disabled students were not able to write phonetic equivalents to unknown words, lacked word analysis skills, and did not demonstrate appropriate spelling on written assignments in the regular classroom.

Problem Documentation

In order to document the problem stated in the previous section, the writer reviewed monthly conference reports with the regular classroom teachers. Each month the two teachers

discussed the individual progress of the mainstreamed child in his/her classroom. During the conference, notes were made on the problems the classroom teacher had identified with the student.

The investigation of monthly conference reports sought to answer the following question : What types of spelling problems were exhibited by the learning disabled student and how many of the 20 resource room students exhibited these problems? The criterion was simply that the teacher identified a student as having a particular spelling difficulty and these results are presented in Table 1.

According to the conference reports, the regular classroom teachers described a total of six problems that related to students' spelling abilities. The most frequent problems cited were that all 20 students failed to recognize a spelling error, 17 students had difficulty with syllables, and the same number showed little desire to spell correctly on written assignments.

Table 1

Summary of Teacher Responses

(1) Unable to recognize a spelling error	20 Students
(2) Little desire to spell words correctly	17 Students
(3) Difficulty with syllables	17 Students
(4) Letter-sound correspondence	14 Students
(5) Poor word attack strategies	13 Students
(6) Not completing spelling assignments	11 Students

In conclusion, the review of conference reports indicated that learning disabled students were not spelling appropriately in the regular classroom.

It was beneficial to investigate the extent of spelling problems with the 20 students and the results generally confirmed the belief that the majority of students were not functioning appropriately on written products assigned to them by the classroom teacher.

For further evidence of the spelling problems with learning disabled children, an analysis of Classification Reports by the Child Study Team was completed. The analysis revealed that all 20 students were deficient in breaking words down into their component sounds, the ability to identify the correspondence between phonemes and graphemes, and basic sight vocabulary. The younger students were a year behind and intermediate at least two years behind normally achieving peers in these areas.

Finally, the difficulties encountered by learning disabled children in the area of spelling are well documented in the research. Spelling difficulties are common among handicapped youngsters (Reynolds and Birch, 1982: Carpender and Miller, 1982: Bryant, Fayne, and Gettinger, 1980). Outcomes from this body of research provide a global perspective to the problem.

Causative Analysis

The problem learning disabled children have with spelling may have many causes. One may be the regular classroom teacher is unable to individual instruction and lessons according to the student's ability, resulting in not understanding the

assignment and frustration. It was the district policy that all spelling assignments be given on grade level and not reading level, which added to the spelling problems.

Another possible cause of the problem may have been that the regular classroom teacher did not adapt materials to assist the learning disabled student. The writer noticed that teachers seldom used multi-sensory approaches in developing assignments, thus the child's sensory system was not utilized in the learning experience. As a result, the student may have become frustrated and not completed assignments.

A third reason could stem from the infrequency of conferences between the classroom teacher and the resource room teacher. The classroom teacher may have needed suggestions and techniques on how to handle spelling difficulties on a more regularly scheduled basis. Meeting only once a month may have caused a loss of continuity in the program. As a result, the teacher may have lost the ability to deal with the immediacy of the problem since he/she did not meet with the resource teacher for another four weeks.

A fourth reason for the problem could have been the lack of structure in the regular classroom setting. Students in the open space environment were involved in many activities and were rather free to move around the class during the school day. This movement could have created opportunities for interaction with classmates and resulted in the learning disabled student not completing assignments.

Another possible cause of the problem could have been that though considerable time was spent on spelling instruction,

it was strongly influenced by commercial materials. These activities are often irrelevant and inappropriate when the student must reproduce them from a workbook page without direct instruction. A minimum amount of time was spent requiring students to generate spelling words in response to their needs. Many teachers felt that the learning disabled child could only complete writing each word five times and not be able to complete other parts of spelling activities. In conclusion, the method of instruction, number of words given, and the fact that words were given on grade level rather than on reading ability could have contributed to problems.

A final cause of the problem could have been the learning disabled students failure to understand or use strategy acquisition. It is possible that teachers had not taught these essential skills as part of spelling instruction. Students may not have been able to predict what was expected on tests, use of self-regulatory mechanisms, or identify available resources to improve spelling performance.

Whatever causes were involved, the learning disabled students were not spelling correctly and using appropriate learning strategies in the regular classroom. The causes may have affected each child differently, but the documentation points to this fact: all 20 learning disabled students were identified by the classroom teachers as having spelling problems in a least one area.

Relationship of the Problem to the Literature

The Education for All Handicapped Children Act of 1975 (P. L. 94-142) mandates that all handicapped children be educated in the least restrictive environment to the maximum extent possible. As a result, regular classroom teachers were required to teach spelling to learning disabled students in their classes, and in many cases were not aware of different instructional strategies that were needed by those students in the area of spelling. The specific purpose of the review was to give additional evidence in support of the global nature of the problem.

There is little disagreement in the literature concerning the presence of academic deficits in learning disabled children. One of the most common problems manifested is in written language skills, and this area can be divided into handwriting, spelling, and composition. Poplin, Grey, Larsen, Banikowski, and Mebring (1980) found that poor written expression has been one of the common characteristics among learning disabled children. Their study revealed that learning disabled children displayed a significant deficit in the areas of spelling and word usage as compared to their normally achieving peers.

The extent of spelling difficulties was revealed in a study by Carpender and Miller (1982) which indicated that learning disabled students deficient in reading also lagged behind normally achieving peers in spelling skills. Their findings concluded that students in a resource room program performed lower than non-disabled students in spelling ability.

The research points to the fact that learning disabled students generally lag behind peers but one must inquire into the reasons for these deficits. A weakness in memory skills was suggested to be the difference between good and poor spellers according to McLeod and Greenough (1980). Their results indicate that poor spellers have deficits in gross memory but they may still be able to order their responses during a task.

Many studies reveal that learning disabled students are more likely to exhibit visual perceptual problems than their non-disabled peers. They seem to be unable to visualize words and have problems with organizing and interpreting visual stimuli. Benjafield (1984) believes that long words tend to be low in imagery and shorter words higher and suggests that there is a relationship between language acquisition and word length. Sears and Johson (1986) explored visual imagery and spelling performance and found that visual imagery is superior to auditory imagery for performance and retention. These findings suggest that visualizing a word is an important factor in successful spelling.

Effective spelling requires the speller to pay attention to consistent spelling patterns and word structures, and to regularly practice writing words correctly. Wong (1986) studied the connection between these word knowledge skills and views spelling as a cognitive learning experience. Her results indicate spelling instruction based on learning linguistic structures and word analysis is an appropriate cognitive developmental method of teaching. Furthermore, she believes

it is important to teach students monitoring strategies that enable them to check spelling accuracy. Nulman and Gerber (1984) feel part of the reason learning disabled children lag behind normally achieving peers is their low cognitive-linguistic immaturity.

Bookman (1984) found that learning disabled students make similar errors that reflect those made by normally achieving peers at specific cognitive levels. Ormrod and Cochran (1988) believe that there is a relationship between how students pay attention to letters in a word and the accuracy of spelling. They feel that poor spellers tend to overlook letters in words while reading and as a result have difficulty developing a working vocabulary to assist spelling. The literature implies that learning disabled students have failed to progress past various stages of language development that normally achieving peers have mastered.

Many schools rely on commercial programs to teach spelling. Graham (1983) represents a belief that the available programs do not help students generate words that reflect their writing needs. He suggests that spelling instruction be individualized to meet specific learning styles and encourage students to want to spell effectively.

Along similar lines, Vallecorsa, Zigmond, and Henderson (1985) studied the practice of spelling instruction by special education teachers and found that many (48%) of the reported teaching practices lacked empirical support. They suggested that special education teachers reevaluate

techniques in teaching spelling to learning disabled children. Effective instructional techniques discussed in the study included having students correct their own spelling errors, whole-word study, testing a few words at a time, and reevaluating words previously taught.

Gettinger, Bryant, and Fayne (1982) believe spelling is a problem for learning disabled students and explored instruction using a few words at a time (unit size), distributing practice of new words over a period of time, and training students in word patterns so that learned patterns could be transferred to new words. The interesting aspect of their work is that limiting the number of words taught at a given time and practicing those words in sentence fill-ins over a period of time had effective results.

Camp and Delcourt (1977) compared the patterns in reading and spelling errors of regular fifth graders and sixth graders diagnosed as retarded readers. The results indicated that normal readers can spell at least 70% of the sight vocabulary on their level while poor readers usually achieve 50%. They suggest that typical errors by poor readers are not phonetically accurate and at times are bizarre guesses. On the other hand, Gerber (1984) conducted five studies of learning disabled students with spelling problems and found that their spelling errors cannot be viewed as different from mistakes made by normally achieving children. According to Gerber, spelling errors should be viewed as being the result of limited information and/or a lack of the

ability to form appropriate spelling strategies.

Bayliss and Livesey (1985) studied visual sequential memory and spelling errors in children. They indicate that cognitive style is very important in teaching and children with reading disabilities tend to use a preferred learning strategy which they do not easily change. Graham and Freeman (1985) explored the spelling performance and strategies used by learning disabled students. The results suggest that students with learning problems should not be allowed to devise their own methods of studying new words. It was pointed out that students' problems are usually associated with strategy production deficiencies. The study provides evidence that students can use strategies effectively but usually fail to employ these when performing assigned tasks.

An article by Wong (1985) discussed the issue of using cognitive-behavioral interventions with children who have not learned to learn. She reviewed strategy acquisition techniques and intervention approaches that were effective with learning disabled students. An interesting point discussed was that trainees tend to generalize components of a strategy they perceive as useful. Furthermore, Brown (1975) believes the acquisition of mnemonic strategies and the ability to use them effectively are an essential part of information processing.

Gerber and Hall (1989) revealed that few studies have been done using cognitive behavioral techniques to teach spelling to learning disabled youngsters and that teachers' instructional language can be the key factor in the success of

such techniques. They suggest that teachers' questioning techniques direct student attention to word relationships help reduce frustration levels in the response. On the other hand, Garner and Alexander (1989) discuss factors that affect metacognition. Their concern centers around knowing if these strategies can be measured accurately and how motivation influences strategy learning. They believe further work is needed in understanding the interactions during strategy training and possible prerequisites necessary for successful use of the strategy.

The learning disabled student population encompasses a wide variety of symptomatology but a common characteristic of this group is spelling difficulties. In general, the review of the literature supports the fact that spelling problems are characteristic of learning disabled students. One problem with these studies is they reflect several opinions for the cause of spelling deficits. Despite the range of results, a few consistent threads of evidence point to the following causes: visual perception problems, poor imagery, weakness of memory skills, and cognitive immaturity.

Whatever the possible causes are, the literature review revealed specific instructional methodologies to teach spelling to learning disabled youngsters. A number of empirically supported techniques were suggested and they include the following: using a diagnostic approach to teaching, promoting whole-word study, self-correction of errors, teaching a limited number of words at a time, and relating new words to

a student's writing experience. One of the most controversial and promising, yet least researched aspects of spelling is the use of effective metacognitive strategies with learning disabled students. Special problems surfaced in the literature regarding metacognitive approaches concerning student awareness of strategies, monitoring, and instructor language. However, as a result of the literature review, it can be concluded that spelling deficits are prominent within this population, there may be more than one cause for these deficits, and with appropriate instruction successful spelling can be achieved.

CHAPTER III
ANTICIPATED OUTCOMES AND EVALUATION INSTRUMENTS

Goals and Expectations

Evidence from other studies indicates a relationship between successful spelling and appropriate teaching strategies. As a result, the following goals were selected for this practicum:

1. The first goal of this practicum was to have the elementary learning disabled student increase spelling performance on written school assignments.
2. The second goal was to have the learning disabled student master learning strategies to improve spelling performance.
3. The third goal was to inform parents of the learning disabled student about techniques that would improve their child's spelling and learning strategies.
4. The fourth goal was to have the regular classroom teacher master spelling and learning strategies that improve the learning disabled student's performance in class.
5. The final goal was to utilize peer tutors to work effectively with the learning disabled student in the regular classroom setting.

Behavior Expected and Measurement of Objectives

The following behavioral objectives were selected for this practicum:

1. At the end of 10 school months, the number of spelling errors would decrease in 14 of 17 students as measured by a pre and post count of type of spelling errors exhibited over a 10 school day period.
2. At the end of 10 school months, the number of learning strategies exhibited would increase in 14 of 17 students as measured by a pre and post count of 6 specific strategies.
3. At the end of 10 school months, 14 of 17 parents would master strategies on how to meet the learning needs of their child as measured by a telephone interview with the parents requesting input about the effectiveness of the homework program.
4. At the end of 10 school months, 10 of 13 teachers would teach spelling appropriately and practice specific metacognitive training components measured by a teacher survey.
5. During the first 7 school months, peer tutors would be utilized effectively in assisting 14 of 17 learning disabled students as measured by teacher responses, indicated, in weekly conferences with the resource room teacher.

The following intermediate objectives were selected to assess and evaluate program effectiveness:

1. At the end of summer recess, a count of learning strategies used and spelling errors exhibited was compared to a similar count before summer recess.
2. At the end of 7 school months, 13 teachers of the learning disabled students were asked to repeat the Survey of Resource Room Services and the results were compared to the same instrument given before implementation.
3. During the 5th and 7th months of implementation, the classroom teachers and peer tutors were asked to evaluate the peer tutor program in order to enhance its effectiveness.
4. During the 5th and 7th months of implementation, parents of the learning disabled students were asked to evaluate the homework program in order to enhance its effectiveness.

Mechanism for Recording Unexpected Results

A log was kept during implementation of the practicum. It served to record unexpected deviations from the original plans resulting from problems or opportunities during implementation.

CHAPTER IV

SOLUTION STRATEGY

Discussion and Evaluation of Strategies

In reviewing possible solutions for the learning disabled student exhibiting spelling difficulties, several aspects of the problem deserved comment and special consideration. First, the literature revealed that spelling problems were not limited to the learning disabled child (Wong, 1986). Secondly, many professionals viewed spelling difficulties as a life long problem. It was suggested that a poor speller would have problems for the rest of his/her life (Fraueheim, 1978). Finally, even though spelling deficits were predominant with the learning disabled student, it must be pointed out that it was not limited to that particular population. As a result, a possible solution must be analyzed considering these aspects of the problem.

A learning disabled student was often distinguished from a normal achiever because he/she tended to be a poor speller, according to Poplin, Gregy, Larsen, Banikowski, and Melbring (1980). The handicapped student was one who was not performing as he/she should in school tasks like reading, writing, spelling and even arithmetic. It was difficult to find a child who had difficulties in spelling and no problem in any other academic area. However, the focus of possible solutions in the practicum setting was limited to remediation of spelling problems.

Teaching spelling in the modern school setting must be looked at in terms of the implications current technology has

on the individual. Today's student will be entering the job market in ten years and probably will have a hand-held spelling computer to assist him/her in daily spelling problems. This poses the question of whether or not spelling instruction should even be a part of the school curriculum for the student.

Although much enthusiasm has been generated by computer technology, a student will have to communicate with other human beings. Society will continue to require that notes be written, job resumes filled out, and other activities completed with or without a hand-held computer. Society is definitely approaching an age of computer systems for people. However, the individual will have to have a base knowledge of spelling to operate a computer. Furthermore, spelling and linguistic skills play a large role in developing good communication abilities, thus improving chances of success in the futures.

In developing a possible solution one must consider how it will affect the mainstreamed learning disabled students in the regular classroom setting. This would encompass the students' participation in spelling instruction, teacher methods, and if appropriate, methods of instruction that would improve spelling problems of normally achieving poor spellers, and reinforcing those techniques with the teacher. Martin (1986) suggested that there was a gap between regular teachers and special educators. He felt regular teachers looked at a student in terms of the curriculum to be taught, while special educators viewed the student as having deficits and developed instruction accordingly. A possible solution would have to take

into regards retraining teacher thinking.

As a result, the writer felt it appropriate to review the literature on methods of teaching spelling to normally achieving youngsters. Some important aspects of teaching spelling were discussed in an article by Graham (1983):

"Spelling consciousness can be stimulated by (a) limiting instruction to relevant and critical skills, (b) emphasizing student progress, (c) studying only those words most likely to occur in the student's present and near future writing endeavors, (d) providing students with efficient learning techniques, (e) using a variety of interesting activities and games, (f) showing students the importance of correct spelling in practical and social situations, (h) requiring study of only those words that the student is unable to spell, and, (i) encouraging pride in correctly spelling papers."
(p. 563)

Many of the concepts suggested had not been used by teachers in the practicum setting and a change in instructional methods could be very effective in improving student spelling.

The literature review suggested that spelling was a cognitive process. Brookman (1984) believed that all children progressed through a succession of stages in spelling and that misspellings reflected the particular stage at which a student was functioning. She felt that the student should be taught with a diagnostic approach in order to effectively remediate spelling problems of a particular stage. Furthermore, Demaster, Crossland, and Hasselbring (1986) felt analysis of spelling errors could identify a pattern which could indicate where the student was having difficulties.

Spelling instruction had historically been taught in a very traditional manner, and this was evident in the practicum setting. The format consisted of giving a word list each week, related assignments, and a test on Friday, followed by a new list for the next week. The curriculum was centered around the text and very little was done to analyze students' individual spelling problems. Graham (1983) offered evidence that traditional textbook curriculums had historically taught skills in isolation and had not given the students the opportunity to use them successfully in writing experiences.

The search for possible solutions revealed specific techniques which could be used to individualize instruction for the learning disabled child. Vallecorsa, Zigmond, and Henderson (1985) believed that re-testing words previously taught and giving a few words at a time were effective methods of teaching spelling. They found that teaching words which were part of a student's listening/speaking vocabulary had considerable effect on improving writing experiences. This solution had possibilities for this practicum because it limited the number of words taught and used words familiar to the students.

In considering possible solutions, the question arose as to how many words should be taught at a given time. Bryant, Drabin, and Gettinger (1984) felt three or four words should be given at a time in order not to overload a student's ability to comprehend information. This solution had merit for the practicum because the students were learning disabled.

A controversial technique of using cursive handwriting to help reading and spelling in the first grade students was explored by Early, Nelson, Kleber, Treegoob, Huffman, and Cass (1976). Their hypothesis was that the use of cursive handwriting would involve fewer reversals and transpositions in a child's writing. The results of the study proved that the exclusive use of cursive writing had no harmful effects, but changes in spelling achievement were not noticeably higher. On the other hand, Graham (1983) explored handwriting development and letter formation skills. His study indicated this approach to be moderately effective but it would require time to teach handwriting to primary children. The students were in the resource room for one hour and instructional time was limited in the practicum setting.

Another controversial technique was the use of EMG Biofeedback with the learning disabled student. Research by Carter and Russel (1985) revealed improved spelling, verbal I.Q., eye-hand coordination, auditory memory, and handwriting legibility in those subjects selected for treatment. As interesting and promising as this technique appeared, lacking the tools necessary for implementation of the program would make it unfeasible.

However, along the same lines was a more practical solution suggested by Zenker (1984). He explored several relaxation techniques to increase students' visualization abilities in order to improve spelling performance. One of the suggested procedures that was beneficial to students was to have them

close their eyes and take a deep breath before tackling a difficult task. Many special education students became frustrated with spelling and through the use of visualization and relaxation, frustration could be reduced.

Another possible solution was the use of finger spelling, which is spelling out a word using the alphabet representing various finger positions on the hand. Research suggested that introducing a word and finger spelling it as it was spelled orally could improve spelling ability (Stein, 1982). The possibility of using this technique as a kinesthetic aid to phonetic spelling was promising but would be time consuming.

Many students displayed signs of developmentally inappropriate inattention during classroom instruction and providing spelling instruction through a specific routine could help to improve learning. Chaing and Schilling (1983) explored just such a method using a speed spelling program. Results indicated that an emphasis on performance and reading the spelling word aloud was effective. This method had promise and could meet the needs of the learning disabled student that required structure.

Another possible solution was the use of computer assisted instruction (C.A.I.). The resource room had a computer and software necessary for implementation and students enjoyed using this equipment. However, research has pointed out that the problems with C.A.I. were monitoring student performance, effective strategies, and software selection (Hayes and

Malouf, 1985). The use of a computer would be possible but would have to be carefully monitored.

An important issue in the learning disabled students' ability to spell was their awareness of what strategies and resources were needed to perform a task effectively. Bondy (1984) suggested that students keep a learning log to help improve their ability to evaluate the effectiveness of tasks performed. The log would encourage students to think about thinking and had promise in developing improved spelling performance.

The use of peer tutors to help the mainstreamed child improve academic performance was another possibility. Russell and Ford (1983) found that peer tutors could be as effective with elementary mainstreamed students as a resource teacher to improve academic gains. Their study was conducted in a setting similar to that of the practicum and was promising.

A final possible solution was to help teachers become aware of the needs of the learning disabled students in their classrooms. The use of regularly scheduled conferences could be beneficial to them (Hart, Hill, Healy, and Fagen, 1983; Martin, 1986; Kaufman, Gottlieb, Agard, Kukic, 1975) and was a possible alternative to the once a month conferences being utilized.

The review of the literature suggested many possible solutions to the problem, some of which were limited by factors within the school setting. However, many contained parts that were selected to meet the needs of the students.

Description of Selected Solution

The writer selected a solution that reflected recent attempts at understanding spelling problems and the role of metacognitive processes with learning disabled children. The solution that was chosen contained advantages that deserve comment. First, specific procedures were selected as a result of being empirically supported methods of instruction. Second, in order to enhance the effectiveness of the program, parental involvement, peer tutors, and teacher education were used as strategy intervention.

Seventeen 5 to 12 year old learning disabled students exhibiting spelling problems in the regular classroom were identified for the program. The students had been classified by the Child Study Team as Educable Mentally Retarded (2 students), Perceptually Impaired (13 children), Socially Maladjusted (1 student), and Orthopedically Handicapped (1 child). The group consisted of 14 males and 3 females, all attending the resource room in the same elementary school. To the writer's best knowledge, none of the students had previously been taught specific spelling skills individually or metacognitive strategies that would improve spelling performance.

The documentation of the problem noted that learning disabled students were required to try to cope with spelling instruction in the classroom that was presented on grade level, yet these students were reading between one and three years below that. Teachers gave traditional spelling instruction through curriculum centered around a text.

A solid research foundation on spelling instruction currently exists, and from this work a number of effective methods for improving spelling were identified. The solution selected addressed these methods with respect to learning disabled youngsters who often exhibit unusual spelling problems. Since time in the resource room was limited, it was essential that students' instructional time be spent on appropriate methodology as pointed out in the work by Leinhardt, Zigmond, and Cooley (1981).

The first step in the design of the program was to develop procedure that could effectively teach spelling to the learning disabled student. Spelling is a complex process that involves the ability to recognize, recall, and reproduce. Poor spellers often have limited spelling vocabularies and usually are unable to determine the correct spelling of unknown words. The method of instruction selected was revealed in the research by Gettinger, Bryant, and Fayne (1982) who believed that effective instruction should emphasize teaching a few words at a time. Furthermore, they believed that distributing practice over a period of time and establishing word patterns that could be generalized into other spelling activities would help a student improve.

The method of instruction suggested by Gettinger et al. (1982) was used during the program. The instructor identified three or four words from each student's reading lessons causing frequent difficulty. Instruction consisted of

practicing the words, visualizing the word pattern, and finally generating sentences using the spelling word. An interesting aspect of their method was treating phonemically regular and irregular words differently during instruction. The program taught phonemically regular words by emphasizing a pattern and using visual cues; the pattern was stressed through color coding. However, the irregular words were taught without attracting attention to phone-grapheme relationships.

In order to identify individual learning needs, the writer used a diagnostic-prescriptive approach to teaching during the program. This approach had proven effective in identifying students' strengths and weaknesses according to Demaster, Crossland, and Hasselberg (1986). The learning disabled student was assessed on what type of spelling errors were committed on written school assignments. Misspellings were recorded on individual charts (see Appendix A) and this procedure allowed the instructor to look at not only the whole word, syllables, and sound clusters, but at letter sequencing.

Training emphasized the student's role as an active collaborator in the learning process. The student first discussed with the writer the type of performance exhibited and then gradually evaluated his/her own spelling performance. Training consisted of having the student write a misspelled word the same way and next to it the correct spelling of the word. Colored pencils were used to denote differences in spelling. The use of imitating an error made was suggested to

be effective by Nulman and Gerber (1984).

The preceding set of techniques was supplemented with alternative approaches to meet individual learning problems. A teaching method used during the program was constant time delay (Stevens and Schuster, 1987); this method required that students write a spelling word while seeing a model card of it, and gradually the model was removed. This approach was used by peer tutors and parents in order to reduce student errors.

Imitation and modeling (Gerber, 1986) was used during the program as a remedial technique. It consisted of the student writing a misspelled word and the instructor assisting the child in achieving the correct spelling. The following example illustrates the procedure for correcting rood (road). The misspelled word was on a card and below it the student was to write the following: write r, pause; write o, pause; change the o to an a, pause; write d.

Another purpose of the program was to improve oral and written expression of the students. In an attempt to accomplish this, students were encouraged to develop a sentence from a recent past experience using a particular spelling word. The sentence was written but a space was left for the spelling word to be inserted. The next step was using word cards that could be rearranged to develop more complex sentences using the spelling word. Research by Nutler and Safran (1984) suggested that using word cards that could be rearranged to

produce new sentences was an effective technique for this type of instruction and this method was used during the program.

In order to encourage meaningful sentence production, the students used imagery and self-questioning strategies suggested by Clark, Deshler, Schumaker, Alley, and Weaver (1984). Students were asked to make visual images of their sentences and explain what that image was, if there was a part that could not be described, and how they could change the image. The use of imagery was employed to help encourage interaction with peers (Weaver II and Cotrell, 1986), as well as develop thinking skills that would accelerate mastery of cognitive material presented in class (see Appendix B).

The major emphasis of the program was to identify spelling problems and provide specific procedures to improve performance. Children received instruction with spelling words while in the resource room for three thirty minute sessions a week. The instructor reviewed spelling words previously taught at two week intervals (distributed practice) and children were taught to predict and evaluate their own spelling performance.

The second part of the spelling program involved training the learning disabled student in metacognitive strategies. The object of this method was to develop a variety of acquisition and retrieval strategies available to the student. The student was encouraged to think about what he/she was doing and an important part of this process was the use of private speech (Harris, 1982). Private speech can be either covert

or overt and is used to help self-regulate the performance of an individual. Students were encouraged to talk through the purpose of an assignment, directions, and techniques that would enable them to successfully complete a task. The process of self-regulation was used to develop cognitive strategies necessary for success in spelling.

Research suggested that metacognitive strategies were helpful to those students who exhibited learned helplessness and lacked means-end thinking (Brown, Campione, and Day, 1981). To facilitate teaching the metacognitive strategies to the students, the writer selected the following procedures for teaching spelling in the resource room:

- "1. Cognitive modeling: The adult model performs a task while talking aloud; the child observes.
 2. Overt guidance: The child performs the task using the same verbalizations, assisted by the adult at first, then alone.
 3. Faded self-guidance: The child whispers the instructions (often in an abbreviated form) while going through the task.
 4. Covert self-guidance: The child performs the task, guided by covert self-speech."
- (Harris, 1982, p. 6)

Students used this particular technique in dealing with assignments and this procedure helped them to think through tasks and be able to carry them out effectively. This technique was also suggested as being effective (Costra, 1984) because when the student was encouraged to express what he/she was thinking and the process taking place, they became more aware of how to learn.

In order to reinforce the metacognitive training with the students, a response cost system (Salend and Henry, 1981)

was used during instruction. Each student was issued a coupon at the beginning of the spelling lesson. The coupon was designed by the writer to depict a sequence of events that took place during the lesson. Alberto and Sharpon (1987) suggested that using pictorial prompts could help handicapped students follow directions and promote self-management skills. The writer modified pictures into cartoons and incorporated this with the response cost coupon providing a number of advantages during training. First, students saw the strategy sequence that was being taught and were rewarded for completing the sequence correctly. Secondly, the instructor was able to analyze returned coupons and detect parts of a strategy not being followed by the student.

The response cost program provided each student with a coupon at the beginning of the spelling lesson. The coupon had a place for the student's name over a set of six pictures. The picture sequence reflected the metacognitive strategies being taught by the instructor. The picture sequence on the coupon was as follows: Picture of an assignment (depicting receiving a task and understanding it was to be completed), a face with eyes (depicting looking the assignment over), a brain (depicting thinking the assignment over), a stop sign with a question mark in it (depicting stop and ask questions if you do not understand the directions), a check (depicting checking your work), and finally a hand turning in a completed assignment. When students failed to follow any of the steps during a spelling lesson they would have to circle

the step violated and turn the coupon in to the teacher. The students' remaining coupons were turned in for rewards listed on a "Coupon Menu" posted in the room (see Appendix C).

The use of thinking strategies was designed to help students learn to think through assignments and also to implement those underlying processes in new situations. The assessment of thought processes with children is difficult and the use of the response cost coupon helped the writer evaluate the effectiveness of training. Additional methods were used to analyze thinking strategies during the program. Students were required to keep a learning log during the program that served as an assessment tool and an aid in spelling instruction. The writer used observation, interviews, and video taped lessons to evaluate and reinforce strategy training during the program.

In order to enhance the training in the resource room homework and parental involvement were used to reinforce spelling and metacognitive strategies. Homework and parental involvement had been a problem for this inner-city school because many parents worked evenings in the casino industry. Special education students have had difficulty remembering to do homework on a daily basis which may have been the result of parents working during the early evening hours. The review of the literature pointed to the fact that homework could stimulate students and encourage parents to work with their child (Walberg, 1983). A review of the literature suggested that the most effective use of homework was to have it graded (Paschal, Weinstein, and Walberg, 1984). As a

result of these findings, the writer believed students in the program would benefit from a specific set of accountable assignments during implementation.

The solution selected was a homework package that was sent home on a two week basis or given directly to the parents if they came to school. It was sent home on a Monday (parents were able to select a convenient day if they wished) because casinos generally require employees to work weekends and take two days off during the week. The package included spelling activities and cartoons (visual imagery) of the learning strategies. As an added incentive to gain interest and get the package home, students made picture buttons depicting a learning strategy, refrigerator magnetic picture/cartoon stick-ups, and their own 35mm picture stories of a learning process. These reinforcements of strategy/skill concepts were used to create parental interest in their child's work and improved participation in the learning process (see Appendix D).

Because many of the parents were black, the literature was reviewed on how to gain cooperation. Some families hold attitudes and behavioral patterns that stem from economic, cultural, and racial circumstances and finding an approach to develop a successful partnership for learning was necessary for this program. Gillis-Olsion, Olsion, and Holmes (1986) suggested using telephone conferences, developing positive relationships, and being a listener as effective ways to communicate. The writer decided to call parents on a monthly basis to monitor progress and encourage parental participation

in the learning process (see Appendix E).

A second strategy to deal with spelling problems of learning disabled students was to generalize the training in the resource room to the regular classroom. The 13 regular classroom teachers met weekly with the writer to assess the students' progress in their classrooms. The meetings were held on an individual basis to help create better understanding and cooperation between teachers. Each meeting was held in the teacher's classroom for about 15 minutes before or after school. Because they had peer tutors in their classrooms for the mainstreamed students, these meetings were also used to monitor the tutors' effectiveness. Recent research in improving teacher effectiveness through in-service training suggested that working with them close to the job and gaining their input was effective in building cooperation (Hart, Hill, Healy, and Fagen, 1983).

The use of a bulletin board as a reinforcement to strategy training in the resource room was used to carry over skills to the regular classroom. It was set up twice during the program by the learning disabled students in the regular classroom instructional area. Students that exhibited sound learning strategies had their pictures placed on the bulletin board along with some of their cartoon sequences. The bulletin board was titled "Great Thinkers" and was selected because it would be visible to the learning disabled student during the day, while allowing classmates to take an interest in the pictures and cartoons exhibited. The writer believed that reinforcement

from classmates could help the learning disabled student model desired behaviors on display in the classroom.

A final strategy to generalize training from the resource room to the regular classroom was through the use of peer tutors. The use of peer tutors had been suggested as effective with learning disabled students with spelling problems (Manoli, Mandoli, and McLaughlin, 1982). Peer tutors were used in the regular classroom in order to help meet individualized instructional needs of the learning disabled student while the classroom teacher was responsible for other groups.

One important component of successful peer tutors was their training (Pierce and Van Houton, 1984). The tutor training program was in areas of spelling and thinking strategies. Peer tutors were instructed to use games and various activities as well as to give clear instructions to the students. The resource room teacher provided all materials that were needed by the peer tutors. Classroom teachers chose an appropriate tutor, place, and time for this activity, and provided a progress report during the weekly meeting with the resource room teacher.

Peer tutors were selected for a number of reasons. The open-space classroom had tables set up for two students to work together and the classroom teacher did not always have the time to spend with the learning disabled students on guided practice. Additionally, the learning disabled students were with their peers and were able to feel like a part of the classroom environment (Strain and Kerr, 1981).

Peer tutors were used only during the first 7 months of implementation of the program because class rosters changed in the fall, not allowing enough time to retrain new tutors.

The use of a number of treatment interventions to improve learning disabled students' spelling performance on written assignments had several advantages. First, correct teaching techniques were being provided in the resource room, at home with the homework package, and in the regular classroom. Figure 1 shows the relationship between interventions and the 10 months of implementation. Secondly, through overlapping

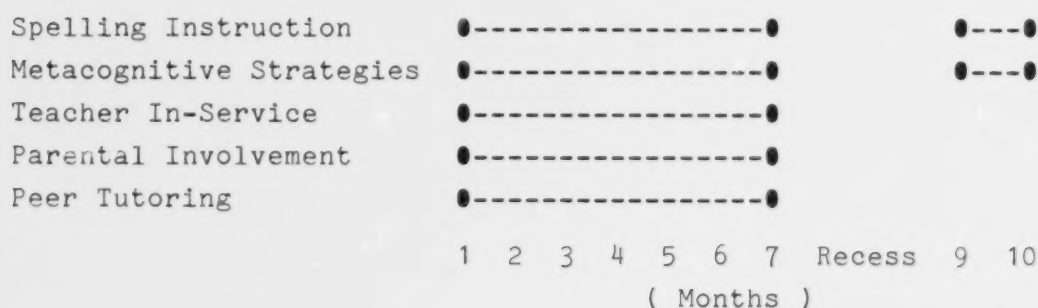


Figure 1. Relationship Between Intervention and Implementation

various techniques, the learning disabled students developed skills in planning spelling strategies, monitoring their performance, and evaluating the results from reinforcement provided by teachers, peer tutors, and parents. Additionally, the program developed required no additional funding expense and the resource room had appropriate materials to implement and support intervention strategies.

Report of Action Taken

The report of action taken describes what actually happened during the implementation phase of the practicum and discusses any deviations from the plan. Careful records were kept for all observations, instruction, and techniques used in the program.

In reviewing records taken during the implementation phase of this practicum, several concerns surfaced that did require a change in the original plan: First, the fact that many students initially had difficulty with following the picture coupon sequence, and second, the fact that teachers identified difficulties with the peer tutor program and students' working relationships.

The first concern appeared at the beginning of the program when students seemed to find it hard to follow the coupon sequence of events. The younger students in the primary grades had more difficulty in this respect than the older children. As a result of their difficulty, the writer decided to reduce the number of symbols on the coupon. The younger students were reduced to two symbols and the older students had four symbols. The symbols used for the younger children were the face and brain, and the question mark and check were added for the older children.

The writer worked with the students using the coupons on an individual basis. As a few thinking sequences were learned, another was then added to the coupon. The

slow introduction of these concepts seemed to be beneficial in assisting the students' understanding of the thinking strategies. Each student used the individualized cartoons to help understand any symbol that he/she was having difficulty with. It took about two months before all the students had adjusted to the six sequence coupon, however the older children understood the process in about a month. The remainder of the cartoon and coupon program stayed the same throughout the rest of the implementation.

The second concern developed when teachers reported that the peer tutors were not using activities correctly or were have difficulty getting along with the student who was to be tutored.

As a result of their concerns, the writer stopped peer tutoring in order to evaluate its effectiveness and teachers' concerns that had developed over the program. In reviewing the problem, approximately half the peer tutors were having difficulty and were removed from the program completely. The remaining students were retrained in how to work with resource room children. The training consisted of reminding the tutor to be considerate of the resource room student, to give clear directions, to check the accuracy of the students work, and to have the student repeat directions that were given. Eight primary students were used as peer tutors and placed back into the program after the retraining process was completed over a three week period.

The eight peer tutors seemed to work well with the resource room students they were assigned. The writer and classroom teachers felt that twice a week tutoring would be adequate and more meaningful than daily peer interaction. The tutoring period was approximately thirty minutes in length and specific assignments were to be worked on during that period. The remainder of the peer tutoring program continued until summer recess with eight primary tutors and resource room children.

The major objective of the program was improving the students' spelling capabilities through effective instruction. The resulting deviations from the original plan did not affect instruction and the remainder of the original plan proceeded as scheduled.

CHAPTER V
RESULTS, CONCLUSIONS, AND RECOMMENDATIONS

Results

The results of this practicum indicated that the learning disabled student could improve spelling skills if strategies were taught appropriately. The first goal of this practicum was achieved, as the majority of students (12 out of 15) improved spelling accuracy on written school assignments.

The number of correct spelling responses by students is presented in Table 2. At the conclusion of the practicum two students had transferred and were not included in the final analysis. The scoring criterion utilized to measure the extent of learning that had taken place between evaluations was an increase of seven correct responses or more to indicate a significant improvement.

A total of four evaluation points was used to assess changes in performance. Data collected for each evaluation point were used to enhance program effectiveness. As illustrated in Table 2, nine students increased spelling performance over the initial 7 months of instruction and the remaining five showed a slight change. At the conclusion of summer recess all experienced a reduction in skills taught but two students. Upon completion of the final two months of instruction, 12 of 15 students had at least equalled scores achieved before summer recess. Results showed that of the nine students that showed improved spelling performance during the first 7 months, only one did not continue to improve after recess.

Table 2

Correct Spelling Responses for Each Student

<u>Grade</u>		<u>Four Evaluations and Total Change</u>				
		<u>Pre</u>	<u>7 Month</u>	<u>9 Month</u>	<u>Post</u>	
K	(EMR-R)	0	5	3	7	+7
K	(EMR-R-*)	0	4	1	4	+4
1st	(PI-P)	10	23	17	20	+10
1st	(OH-R)	2	14	9	16	+14
1st	(PI-P)	0	15	8	17	+17
2nd	(PI-1)	14	28	Transferred		
2nd	(PI-1)	5	14	10	17	+12
2nd	(PI-P-*)	10	18	Transferred		
3rd	(PI-P)	7	12	14	24	+17
4th	(PI-2)	9	13	10	14	+5
4th	(PI-3)	7	19	11	20	+13
4th	(SM-4)	12	21	18	25	+13
4th	(PI-2-*)	9	12	14	20	+11
4th	(PI-P-*)	3	13	8	15	+12
5th	(PI-2)	4	9	8	8	+4
5th	(PI-2)	9	17	13	20	+11
5th	(PI-2-*)	5	13	10	15	+10
Total Possible		390	390	390	390	
Total Correct		82	204	154	242	
Percent Correct		21%	52%	39%	62%	
Percent Change			+31%	-13%	+23%	

Note: Grade indicates student's grade, Child Study Team evaluation, and reading level at the beginning of implementation. An * indicates poor student attendance by missing 15 or more days.

An examination of student classifications was made to determine their possible influence in relation to appropriate spelling instruction. The review showed that the two educable mentally retarded students exhibited less of a gain than other classifications. Of the perceptually impaired students, nine showed improvement and two did not show significant gains. On the other hand, the greatest gain was achieved by the socially maladjusted child.

A second analysis of the total group performance was made

in order to determine differences between evaluation points. The greatest increase (+31%) in spelling performance was attained during the first 7 months of instruction. Results revealed that even though summer recess resulted in a loss of skill knowledge (-13%), students quickly returned and surpassed performances made at the 7 month point.

The second goal of this practicum was to have the learning disabled student master learning strategies that improved spelling performance on written school assignments. Table 3 represents the data collected regarding the students' abilities to evaluate task demands and interaction of their abilities in completing assigned tasks. This goal was achieved as the majority of students (10 out of 15) did improve strategy ability.

The number of learning strategies exhibited by students is represented in Table 3. The scoring criterion utilized to measure the extent of learning that had taken place between evaluations was an increase of four strategies or more to indicate a significant improvement.

Results provided evidence that learning disabled students could learn strategies to improve performance. The scores were fairly evenly distributed initially. Primary students exhibited little or no strategy ability and intermediate students (3rd to 5th grade) demonstrated at least one strategy. At the conclusion of summer recess all the students exhibited a loss in strategy skills. Upon completion of the final 2 months of strategy training, 13 out of 15 students had at

least achieved previous levels exhibited at the 7 month evaluation point.

Table 3

Learning Strategies Exhibited by Each Student

<u>Grade</u>		<u>Pre</u>	<u>7 Month</u>	<u>9 Month</u>	<u>Post</u>	<u>Change</u>
K	(EMR-R)	0	2	1	2	+2
K	(EMR-R-*)	0	3	1	1	+1
1st	(PI-P)	0	6	3	6	+6
1st	(OH-P)	0	4	2	5	+5
1st	(PI-P)	0	6	3	6	+6
2nd	(PI-1)	0	6	Transferred		
2nd	(PI-1)	0	5	3	6	+6
2nd	(PI-P-*)	1	5	Transferred		
3rd	(PI-P)	1	6	5	6	+5
4th	(PI-2)	1	5	1	5	+4
4th	(PI-3)	1	6	4	6	+5
4th	(SM-4)	1	6	4	6	+5
4th	(PI-2-*)	1	3	1	5	+4
4th	(PI-P-*)	0	4	0	3	+3
5th	(PI-2)	1	2	0	2	+1
5th	(PI-2)	1	6	4	6	+5
5th	(PI-2-*)	1	4	1	4	+3
Total Possible		90	90	90	90	
Total Exhibited		9	68	33	69	
Percent		10%	75%	37%	77%	
Change			+62%	-39%	+40%	

An examination of student classifications was made to determine their possible influence in relation to learning strategy acquisition. The review showed that the two educable mentally retarded students exhibited little gain and all but two perceptually impaired students showed significant gains during the first 7 months. Results showed that of all the students who achieved four strategies during the first 7 months only one decreased strategy abilities after summer recess training. Upon completion of the final two months of strategy

training, the students with poor attendance showed little progress, while the student that was classified socially maladjusted exhibited one of the best gains. Evidence pointed to the fact that reading levels of the students did not play as significant a role in influencing results as classification or attendance, which also seemed to be the case for teaching spelling strategies appropriately.

A second analysis of the total group performance was made in order to determine differences between evaluation points. The greatest increase (+66%) of learning strategies being exhibited took place during the first 7 months of training. Results revealed that even though summer recess resulted in a loss of knowledge (-39%), students quickly returned to or surpassed performances made at the 7 month point. It was interesting to note that both spelling and learning strategy development over the period of implementation showed similar patterns in general performance, student attendance, and cognitive ability based on classification.

The third objective was to increase parent awareness of how to meet the learning needs of their child. Table 4 summarizes the data collected from the parent survey and results indicated that parents did gain awareness of techniques that they could use to help meet their child's learning needs.

Interview responses indicated parents felt the homework package and picture cartoon sequences helped them understand the work being done in school. Data revealed that the majority of parents (10 out of 15) gained awareness of the fact that

homework reinforced newly learned skills and helped to master new knowledge.

Table 4

Results of Parent Survey

Question	No Response	Yes	No
1. Did you enjoy materials that were sent home?	4	10	1
2. Did you use the pictures at home?	4	9	2
3. Did the homework package help?	4	11	0
4. Did you notice a difference in work habits?	4	10	1

The interview had two questions that required the parent to give input to the writer. In Question #5 the parent was asked to identify when they helped their child complete homework. Responses indicated that many did this around dinner time or on days off. In Questions #6 the parent was asked to suggest improvements for the homework package. Responses revealed parents felt the homework package was fine and the only suggestion was to send it home with a sibling so it would not get lost.

An analysis of the parent survey compared to student performance revealed that the parents with no response had children with either poor attendance or performance during implementation. Furthermore, an inspection of spelling results showed that 3 out of 4 students did improve but had been on the same reading level for some period of time.

The fourth goal was to have the regular classroom teacher master spelling and learning strategies that improved the learning disabled students' performance in class. Table 5 summarizes the data collected from the survey. Responses indicated this goal was achieved, as the majority of teachers

felt that using appropriate techniques would improve spelling performance.

Table 5

Survey of Resource Room Services

1	1. In your opinion, is cooperative planning with the resource room teacher important in meeting the needs of learning disabled students?		<u>Yes</u>	<u>No</u>
		Pre	13	
		Post	13	
2	2. Does the resource room teacher provide adequate support in meeting the needs of learning disabled students in the regular classroom?		<u>Yes</u>	<u>No</u>
		Pre	12	1
		Post	13	
3	3. Is the monthly conference with the resource room teacher effective in meeting your needs in helping learning disabled students?		<u>Yes</u>	<u>No</u>
		Pre	10	3
		Post	12	1
4	4. In your opinion, are you able to use various techniques to meet the spelling needs of learning disabled students?		<u>Yes</u>	<u>No</u>
		Pre	7	5
		Post	12	1
5	5. Have you ever used peer tutors in your classroom?		<u>Yes</u>	<u>No</u>
		Pre	13	
		Post	13	

Are you aware of or do you use the following techniques?

Pre	Post	
<u>0</u>	<u>13</u>	Response cost system
<u>3</u>	<u>13</u>	Prompting strategies
<u>3</u>	<u>13</u>	Using a variety of interesting games
<u>0</u>	<u>13</u>	Test-study-test method for spelling
<u>2</u>	<u>13</u>	Having students correct their own spelling tests
<u>10</u>	<u>13</u>	Having students write spelling words several times
<u>1</u>	<u>13</u>	Relying on commercial spelling programs
<u>2</u>	<u>13</u>	Testing a few words daily
<u>0</u>	<u>13</u>	Using guided imagery as a classroom technique
<u>0</u>	<u>13</u>	Using self-questioning techniques
<u>1</u>	<u>13</u>	Having the student reconstruct what happened
<u>0</u>	<u>13</u>	Using time-delay for spelling instruction
<u>2</u>	<u>13</u>	Using self-monitoring strategies
<u>3</u>	<u>13</u>	Distributing spelling practice over a period of time

An examination of data revealed that teachers believed cooperative planning was essential for them to effectively be able to teach the learning disabled students in their classes. Likewise, all teachers responded that the resource room teacher had provided adequate support during the 7 months of implementation. However, it would appear that they were less confident in using specific techniques designed to teach a learning disabled student initially but four teachers did feel they had learned techniques that would help them by the end of 7 months.

Clearly, analysis of particular instructional needs of the student revealed interesting data. Initially, five empirically supported methods of teaching spelling and/or learning strategies were not understood by teachers. Additionally, only one teacher was even aware of the fact that commercial programs were the basis of the district spelling program. Finally, 10 of 13 teachers based spelling instruction on the traditional method of writing words several times each.

The final goal was to utilize peer tutors with the learning disabled students effectively in the regular classroom and Table 6 summarizes the data collected.

Results of the Peer Tutor Questionnaire demonstrated that both tutors and tutees enjoyed working together as a team. Responses indicated that by working with specific tasks (picture cartoons and "Great Thinkers" bulletin board) and giving detailed instructions for working with the learning

disabled student, tutoring was beneficial to both children. Tutors felt that their spelling skills had improved also. Furthermore, an examination of spelling and learning strategy results revealed that 5 of the 7 learning disabled students tutored had met the criteria for improved performance. It could be pointed out that two students who failed to meet the criteria were classified EMR.

Table 6

Peer Tutor Questionnaire

Question	Yes	No
1. Did you enjoy working with your friend?	6	1
2. Did you help put up the "Great Thinkers" board?	7	0
3. Did you sit together at a table to work?	7	0
4. Did you enjoy the picture cartoons?	7	0
5. Did working together improve your spelling?	6	1

Note: Peer tutors questioned were the students who worked during the entire 7 months and were the kindergarten through 2nd grade children. The older peer tutors did not finish the program as a result of difficulties in the classroom. This is discussed in the conclusions.

In conclusion, data indicated that learning disabled students could improve spelling accuracy by using empirically supported teaching strategies. Also, training students in a variety of acquisition and retrieval skills improved spelling performance. Additionally, a combination of teacher in-service, peer tutors, and parental involvement provided data that indicated a variety of interventions were effective with learning disabled students. Finally, results provided evidence that spelling and metacognitive strategies were influenced by summer recess and students' cognitive maturity.

Conclusions

An analysis of the program implementation indicated that the elementary learning disabled student could improve spelling performance through efficient teaching procedures. Data compiled and observations made during the program regarding how each objective may have influenced student progress produced the following conclusions.

The writer found that effective spelling instruction played a crucial role in developing improved spelling performance on written school assignments. The evidence indicated that 12 of the 15 children improved spelling as a result of using research-supported methods. In evaluating the spelling program, the critical point to be considered was the possible effect of varied teaching methods on students' progress.

The skill deficits identified and taught varied according to the reading level of the students. Students who read on readiness level exhibited the most difficulty with initial letter-sound associations. Students who read on the primer level had difficulty with initial/final consonants (b,d,ks as in box, r,t,v,w,y,z). The two children on the first grade level had difficulty with vowel sounds and consonant digraphs (ch,th,sh, and wh). The five students on the second grade level had the most problems with adding word endings, clusters, and vowels. The student on the third grade level exhibited problems with vowel sounds, r-controlled vowels (ar,ur,ir, or, ore). The students on the fourth grade level had the

same problems as the third grade level students, as well as difficulty with unstressed syllables (ain,ant,y,ey).

A diagnostic-preccriptive approach to teaching spelling was used in order to remediate individual learning problems. An important observation made during implementation was that this method provided the basis for identifying and assessing specific weaknesses in word concepts. Those conclusions were supported by the work done by Demaster et al. (1986) who believed error-analysis was an appropriate technique to use with learning disabled children. The diagnostic-preccriptive approach revealed students made systematic types of errors, which indicated they were not making random guesses. The writer noticed that progress in decoding new words (not having been taught) may have been related to an increased awareness of decoding strategies. Furthermore, these findings pointed to the fact that spelling was a cognitive-developmental process (Bookman, 1984) and that it proceeded developmentally (Gentry, 1984).

Generally, the results of the spelling program indicated that research approved methods would improve learning disabled students' performance. Data demonstrated that teaching a few words at a time, distributing practice over two week time intervals, and establishing word patterns that could be generalized in future activities were effective. However, some students were not able to learn skills using those methods all the time and required additional techniques. The most effective method for specific remediation of spelling problems

was constant time delay (Stevens and Schuster, 1987). The writer found that modifying this technique to stress a spelling pattern and not a word had beneficial results. Students who had difficulty with a specific word tended to have difficulty with a particular word pattern associated with the word. As a result, having students develop words using the pattern and time delay of pattern exposure improved specific skills.

Another aspect of the program that had very good results was developing written expression using new spelling words. A strong case could be made that once students were confident in using word patterns they could initiate new words in written activities. The students first used new words in a fill-in sentence (Nutter and Safran, 1984) and gradually developed their own sentences. The writer observed that the majority of students initiated the most effective sentences when they were related to personal experiences. The most consistent result of this method was that it helped develop improved sentence quality and oral expression.

Students liked various activities that were helpful in developing spelling and language expression but their favorite was the use of imagery. They enjoyed the use of imagery in creating their sentences from a photograph of the picture they had developed in their mind. Students looked forward to closing their eyes and thinking about a scene that could be the basis for a sentence. They were able to combine the use of imagery and sentence development quickly, which the writer, as well as the research (Weaver II and Cotrell, 1986)

found to be helpful in developing cognitive gains.

The data in Table 2 demonstrate that with proper methods of instruction learning disabled students improved spelling performance. It was significant to note that all students made progress during the first 7 months of the program but 2 out of 15 did not regain previous proficiency after summer recess reinforcement. The writer concluded that some but not all the skills previously taught were lost over summer recess and with reinforcement activities could be easily regained. However, relatively distinct differences did occur as a result of students' cognitive ability levels and performance.

Students who had been classified EMR did not progress as quickly as others and the socially maladjusted child made the most achievement throughout the program. The results indicated that learning disabled students could be taught spelling skills effectively but progress may have depended on cognitive ability. Additionally, the most significant advances were made by the primary students in grades one, two, and three and the writer believed this could have been the result of the effective peer tutor program in which they were involved.

The second goal of the spelling program was to train the students in metacognitive strategies to improve spelling performance. As a result, data indicated that 10 out of 15 students improved metacognitive performance and that those skills were an important component of improved spelling performance.

Assuming that metacognitive training influenced the performance, it was interesting to note that 9 out of 15 students met the criteria for improvement in spelling and learning strategies. Additionally, of the six students that did not achieve the criteria, only one student was not either EMR and/or poor attendance. The implication drawn from the data suggested that training learning disabled students in learning strategies was affected by their cognitive capabilities, attendance, and possibly parental support.

Recent research (Garner and Alexander, 1989; Ellis, 1986) suggested that motivation played an important role in cognitive strategy training. The writer observed that as students increased their ability to evaluate a task they became more confident in attempting new spelling assignments. The point that seemed to emerge was that metacognitive strategies helped decrease the students' frustration levels as a direct result of their self-evaluation abilities being developed and increased.

The program was designed to intervene in specific strategy difficulties through the use of cartoons and corrective feedback. The students enjoyed using the cartoons, writing in the sayings, coloring them, and placing their 35mm picture over the face. The fact that all the students were identified as being deficient in at least one strategy during implementation and exhibited difficulty in understanding the importance of successful task completion agreed with Garner and Alexander (1989) who felt not all strategies were easy to learn. Data from Table 3

supported these findings, as only 10 out of 15 students mastered all six strategies effectively.

Recent research (Harris, Graham, and Freeman, 1988) pointed to the importance of monitoring strategy development and during the program implementation the most effective way to monitor student performance was with the strategy coupons. It was particularly difficult to judge the effectiveness of learning strategy training with the younger students through the use of conversation, questioning, and log entries.* Three students participating had behavior problems in school and were interested in the coupon program but at times their behavior interfered with them receiving a coupon for a lesson. As a result, they became frustrated but would usually regain interest within a day or two. It should be noted that the variables that seemed to interfere with the coupon program centered around the inability to collect as many coupons as classmates due to poor attendance, lack of reinforcement from parents regarding interest in cartoon homework, and behavior problems during class that prevented successful completion of a task.

The response cost program (Alberto and Sharpton, 1987) was designed to prevent rewarding of fast guesses and have the students stop and think about what they were doing. The writer observed that as students became aware of the coupon strategies they demonstrated less impulsive responses. The combined cognitive-behavioral aspect of the program helped develop an awareness of the thinking process needed to evaluate task

demands. It was observed that the intermediate students were better able to verbalize how new skills were more efficient in improving their spelling performance. They were better able to abbreviate task directions appropriately, while the younger children tended to leave steps out.

Learning disabled students are usually slow to become actively involved in tasks and the writer found that students' understanding of attentional processes increased as a result of the strategy program. These findings reflected the belief Snider (1987) that self-monitoring provided the student with an understanding of what he/she was to pay attention to during an assigned task. It was observed that the students wanted to receive the daily coupons and would concentrate on the process in order to complete the assignment. In turn, the writer noticed an increase in time-on-task and that students did not tend to drift off target as quickly. Examination of students' logs revealed the majority expressed the fact that they tried to pay attention to what was required in order to complete the task effectively. The writer felt that as a result of increased attention to task students' spelling performance benefited them.

From the data presented, it appeared that learning disabled students improved spelling performance as a result of increased attention to task and the development of skills that improved their abilities to complete assignments effectively. Findings indicated that learning disabled students had an ability

deficit in metacognitive strategies but were able to be taught appropriate strategies that increased their spelling performance. Finally, results suggested that there were a number of variables that could influence effective strategy training with that population.

The final three goals of the practicum were designed to reinforce and enhance the program taught in the resource room. The fundamental concept was to have the acquisition of new spelling skills generalized into other areas of performance. Ideally, this strategy would enable learning disabled students to manipulate, use, and evaluate new spelling tasks outside the resource room.

The third practicum goal was designed to inform parents about techniques that would improve their child's spelling performance. The writer felt that this objective was one of the most rewarding and had some surprising results. Parental feedback indicated that all parents contacted, except those of four students, appreciated good communication and materials to work with their children at home. Many came in to school to ask for more materials such as crayons, pencils, paper, and extra workbooks. The writer believed that the work sent home in the homework package was completed with parental assistance but the extent of the work done was difficult to monitor because not all the assignments were returned. However, the majority of students indicated that the cartoon pictures were used at home, which demonstrated that the homework packages were reviewed by parents. The most significant point to the package

was that the cartoons sparked interest and that having the students' pictures in them was as added stimulus for parents to review them.

The writer believed that listening to parents, expressing concern for their child's academic improvement, and good communication played a significant role in their interest in the program. Gillis-Olson et al. (1986) suggested that those techniques were an important factor in communicating with black parents of handicapped students. Another possible factor in parental support may have been that many of the parents (9 out of 15) observed that success was possible as a result of working in casino jobs that encouraged upward mobility. That factor may have influenced their interest in encouraging educational goals for their children. It should be noted that before casinos, many parents worked seasonal jobs and were usually unemployed during winter months.

In order to examine the effects of parental involvement on performance, the writer reviewed the results of the four students with little or no parent response during the program. The most significant aspect of the data was that they had poor attendance and that may explain why they did not achieve acceptable performance levels for both areas of training. Data revealed that 2 of the 4 students attained acceptable results for spelling and none for metacognitive training. Those findings, in combination with the attendance problems, implied that some aspects of program training were influenced through parental support. A few possible assumptions for this problem

were that parents could not read well enough to help their child, homework did not get home, or the cartoon enticement did not spark parental interest.

The fourth goal of the program was to have the regular classroom teachers master spelling and learning strategies to improve student performance in class. All 13 teachers indicated they had benefited from increased communication with the resource room teacher and they were aware of how to teach different strategies to learning disabled children. However, the writer was not able to spend time observing classroom techniques to see how effectively they were being used to improve spelling instruction. Additionally, the results of improved communication reflect what authorities (Will, 1986) suggested were effective procedures between the resource room teacher and regular classroom teacher.

The final goal of the practicum was to utilize peer tutors to help learning disabled students assume a more active role in the learning process in the regular classroom and to generalize skills taught in the regular classroom. Mandoli et al. (1982) suggested that peer tutors were effective with mainstreamed students to help improve spelling skills but this concept presented the most challenges during implementation.

Several intermediate teachers reported a problem with the peer tutors during the third week of teacher conferences. As a result, the writer spent more time training the tutors but teachers continued to identify problems. Finally, in order

to continue good rapport with teachers during spelling methods in-services, the intermediate part of the peer tutor program was canceled.

An analysis of teacher conferences and student interactions indicated a number of possible causes of the intermediate peer tutor problem. Intermediate classroom teachers tended to find peer tutors (same-age) disruptive in the open space setting. The intermediate open space areas had noise problems and movement distractions and the writer felt that teachers were simply attempting to cut down on those by eliminating the peer tutor interactions. Secondly, peer tutors could have been better trained and more closely monitored. Finally, the most important aspect of tutoring could have been limiting the period of students' involvement by giving very specific task assignments.

In contrast, the seven primary peer tutors worked very well with the learning disabled students. Furthermore, an examination of their performance at the end of the program revealed that 5 out of 7 students met the criteria for improvement in spelling and thinking skills. The two students who did not meet the criteria were classified EMR and supplied further evidence that cognitive ability may have influenced training. Primary teachers were very enthusiastic about the tutoring and cooperation levels exhibited between students. The possible reason for the seven primary teachers' success with peer tutors in the classroom may have been a comprehensive

discussion of solutions to the problems during in-service meetings.

The review of the practicum results demonstrated that the learning disabled students experienced substantial loss of previous learning during 2 months of summer recess. All the participants lost in spelling skills (-13%) and in metacognitive skills (-39%). Further investigation revealed that with an eight week reinforcement period they regained previous levels in 13 out of 15 students. The writer believed that with a summer reinforcement package and parental support the loss would be reduced and fall instruction would be more appropriate to continued academic advancement.

The writer felt that there were a few hypotheses that could be formulated from reviewing the results of the practicum. First, it appeared that learning disabled students' spelling performance improved when using empirically supported teaching methods. Secondly, there was evidence that training students to monitor and evaluate task performance could help to significantly assist learning, time on task, and the ability to focus attention on what needed to be done in order to be successful. Finally, the learning disabled students' spelling performance was directly influenced by a variety of variables that included regular classroom instructional techniques, parental involvement, and cognitive abilities.

Recommendations

The practicum program added to a limited body of literature supporting the use of appropriate instruction as an effective means of improving learning disabled students' spelling performance. Despite the promise of the model, the writer recognized a number of issues to improve and expand program effectiveness.

Taken together, the results of the spelling program provided the ingredients for teaching learning disabled students to improve their spelling performance. Additional considerations to improve the application of the program would include having teachers use more writing exercises during spelling instruction and not having them rely on commercial materials to solve difficult learning problems.

Additionally, microcomputers and educational software are becoming increasingly available in the classroom and could provide students with meaningful learning experiences. The use of instructional software based on a diagnostic-prescriptive approach to spelling could individualize teaching for learning disabled students. The use of the Franklin Spelling Ace to practice word pattern relationships has significant potential in the classroom. It would enable students to review a word list pertaining to a specific spelling pattern and reinforce teacher instruction.

It was evident that learning disabled students could be trained in metacognitive strategies that improved spelling

performance. Unfortunately there was little research available (Garber and Alexander, 1989) on issues and implications of designing programs for spelling improvement. The writer believed that the following issues should be addressed, as they significantly influenced the effectiveness of the program. First, research was needed on measures to identify whether a strategy had been learned. The practicum program found the cartoon coupons an excellent method, however further research was needed. Second, descriptive research was needed to identify the importance of instructor language and the role of motivation in training thinking strategies. Finally, practicum data indicated that the research should lead to establishing guidelines for determining the effectiveness and/or eligibility of training students at various levels of cognitive maturity.

It was apparent that there were direct ties between summer recess and learning disabled students' abilities to retain information previously taught. The writer recommended that spelling review packages be given to parents for summer practice. The package could contain weekly review activities based on the summer calendar. Further research should attempt to identify the parameters of effective summer intervention programs for learning disabled students with spelling deficits.

It seemed clear that peer tutoring could be effective with leaning disabled students and the writer recommended the use of cross-age tutors to improve program effectiveness. The method of tutoring could be useful in monitoring metacognitive

training (Garner and Alexander, 1989), as well as providing academic and behavioral stability to the instructional process taking place in the regular classroom.

The final observation was that the findings raised intriguing questions concerning the effect parent involvement had on students' increased spelling performance. Apparently, there was a strong case to be made that spelling skill acquisition was improved through parental involvement. The writer believed that procedures to train parents for effective home instruction and providing materials for learning could provide improved academic gains. Furthermore, future research should review the effect of upward job mobility on parental motivation in assisting their children with academic tasks.

In conclusion, the spelling program raised interesting questions that warranted further empirical pursuit. The writer recommended that combinations of different methods be employed to improve learning disabled students' spelling performance.

Dissemination

The final report serves as a mechanism for sharing information valuable to the childhood community at large. Dissemination of this report will be made at workshops with supervisory staff of the school district, at conferences, and with Nova University.

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APPENDIX A
SAMPLE ERROR CHART

ERROR ANALYSIS CHART

Each student was monitored on the types of spelling errors exhibited. A sample of a student chart is presented below.

Student _____

Sound - Letter Associations:

Consonants	m, n, w
Vowels	a, i
R-Controlled	ir
Digraphs	ch
Clusters	
Unstressed Syllables	ey

Word Structures:

- Adding word endings
- Word endings with y
- Spelling Patterns
- Compounds
- Contractions
- Prefixes and Suffixes

Note: Sample chart reflects possible student error patterns.

APPENDIX B
SAMPLE SPELLING ACTIVITIES

SAMPLE SPELLING ACTIVITIES

The following are samples of various activities that were used to motivate student performance. All activities were geared to each student's reading level.

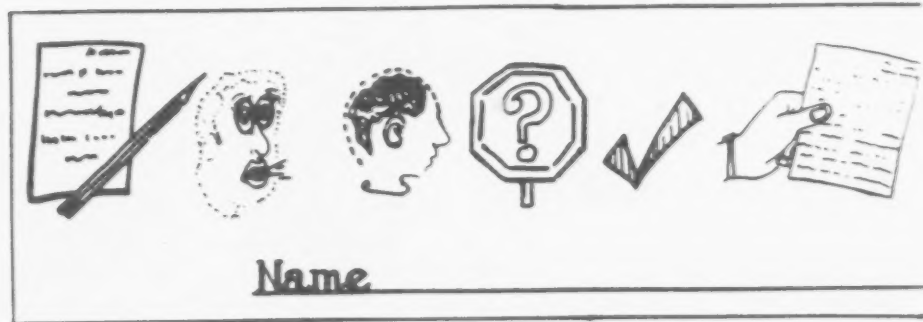
1. Making new words by changing a vowel:
example - pot, pet, pat, pit
2. Making other words by using a common ending:
example - ill, bill, dill, fill, hill
3. Spelling chain:
example - one student spelling a word and the next child spelling a new word with the same initial/final consonant
4. Putting words together:
example - using cut out letters to assemble words
5. Blackboard spelling:
example - writing the letters " sh " on the board and each child making a word using those letters
6. Scrambled words
7. Dictionary games - what page is " sh " on
8. Memory games - students were shown a list of words and were asked to remember as many as possible
9. Word Bingo
10. Classification games

APPENDIX C
RESPONSE COST COUPON AND MENU

Front



Back



Note: The writer and Suzanne Forrest produced and designed the coupon specifically for this practicum.

COUPON MENU

Students were able to buy merchandise from the coupon menu upon collecting the correct number of coupons.

Merchandise	Number of Coupons Needed
1. Pencil	7
2. Eraser and Pencil	10
3. Space Eraser	12
4. Crayons and Art Paper	17
5. Toy from Toy Box	25
6. Model Airplane Kit	28

APPENDIX D
LEARNING STRATEGY CARTOONS

Students were to fill in the cartoon
body as they wished and develop a relevant saying.
The face could be their 35mm picture.



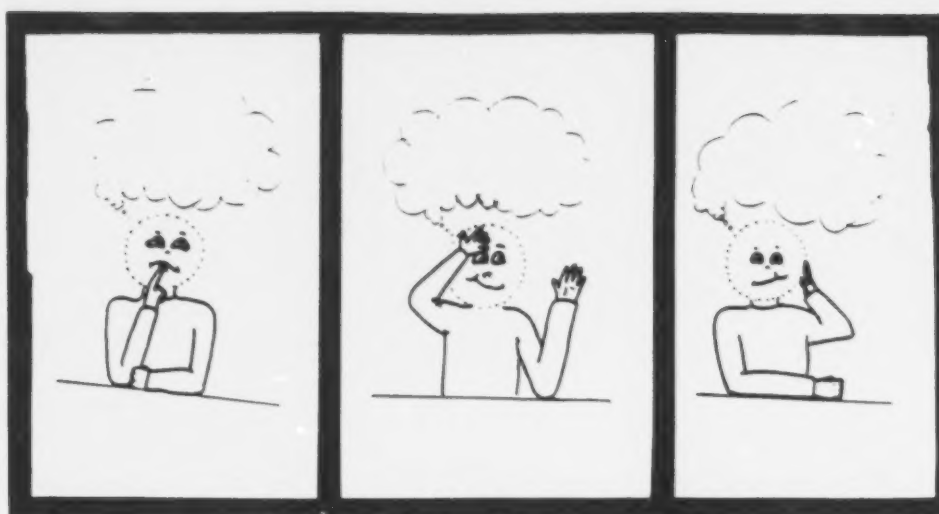
Note: Suzanne Forrest designed and produced all cartoon
depictions specifically for this practicum.

Cartoons were size appropriate for notebooks,
buttons, stick-ups, and home.

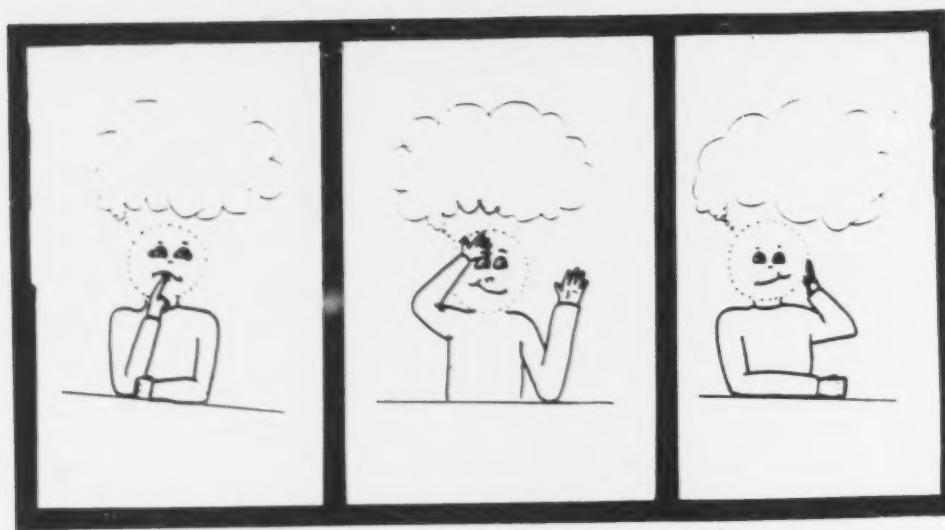
87



Students were to fill in parts of a sequence.

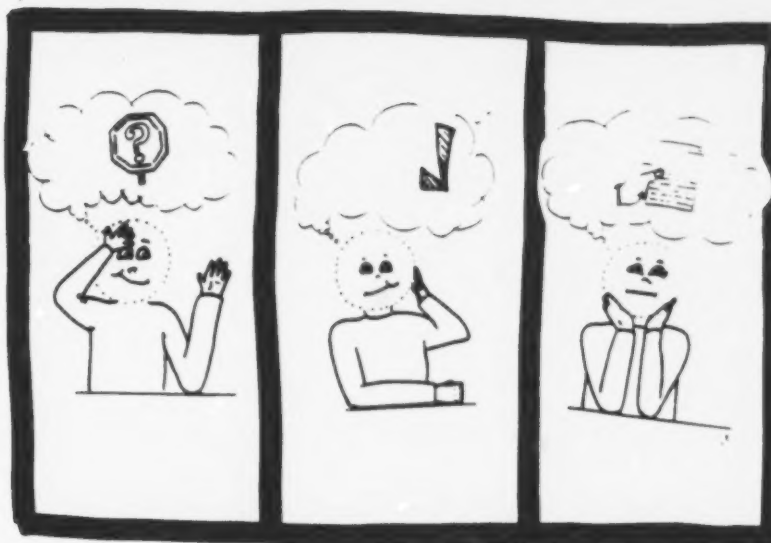
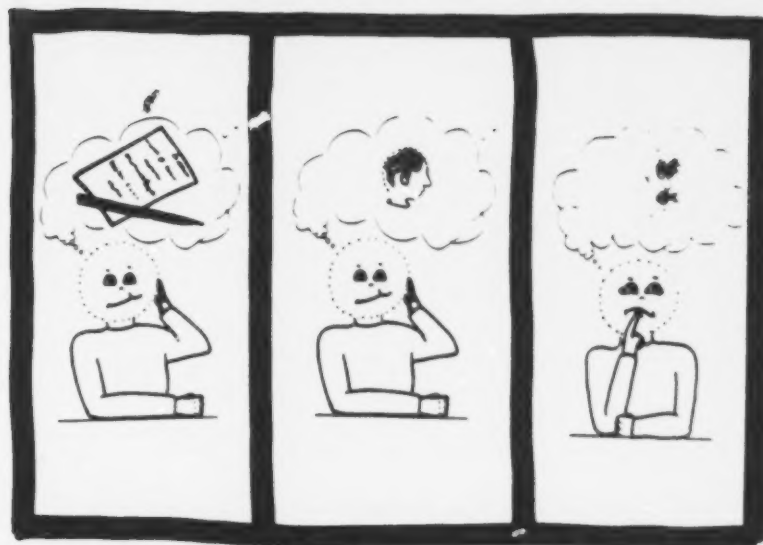


Students were to fill in a sequence according to their needs.



Strategy Sequence Cards

Students were to cut the cards apart and
rearrange them in the correct order



APPENDIX E
PARENT TELEPHONE INTERVIEW

PARENT TELEPHONE INTERVIEW

The writer developed an interview guide and questions that were presented exactly as they appear on the guide.

The reasons for the interview guide were:

1. To assess the effectiveness of the homework package.
2. The use of the telephone makes the interview more accessible to parents with difficult work schedules.
3. Wording familiar to the parents would obtain better rapport and more accurate responses.
4. Actual responses differed in detail but answers were judged as positive or negative.

PARENT TELEPHONE INTERVIEW GUIDE

Hello, I am _____ calling from _____. I just wanted to call and see how _____ homework is going. Can we talk a few minutes about it?

1. Did you enjoy the games that I sent home?
2. _____ takes a good picture. Did you hang it on the refrigerator?
3. Did the homework help you work with _____?
4. Did you notice a difference in work habits?
5. I know you are busy but what time of day did you help _____ with his/her homework? Your day off?
6. What could I do to improve the homework package?

APPENDIX F
TESTS USED FOR PRE AND POST COUNTS

The writer used the following procedure to identify if a strategy was mastered by the student:

Over a two week period the writer observed the student during spelling class to see which of the six skills were exhibited.

Skills to be identified:

1. Did the student look over an assignment when he/she received it?
2. Did the student repeat directions or at least give them thought before starting to work?
3. Did the student think about what he/she was doing?
4. Did the student stop to ask directions if they did not understand part of an assignment?
5. Did the student check or review the work before handing it to the instructor?
6. Did the student complete an assignment to the best of his/her ability before handing it in?

Note: Writer judgement was necessary to determine if thought process was taking place. All skills tested were identical to learning strategies taught and used on the coupon.

Reading Level Spelling Tests

Readiness Level: The instructor identified the picture and the student circled the correct initial letter response. Total 30 items.

Sample:



Primer Level: The instructor gave 15 initial consonant samples to the student (same format as given at readiness level).

Additionally, the student was given 10 vocabulary words from the primer reading level to spell. Total 25 items.

- | | |
|---------|---------|
| 1. the | 6. hat |
| 2. cat | 7. can |
| 3. and | 8. run |
| 4. play | 9. with |
| 5. here | 10. it |

First Grade Level: The student was given 25 words to spell.

- | | | | | |
|----------|----------|----------|------------|----------|
| 1. are | 6. from | 11. he | 16. one | 21. then |
| 2. black | 7. fun | 12. like | 17. pink | 22. they |
| 3. blue | 8. got | 13. made | 18. purple | 23. time |
| 4. can | 9. grade | 14. me | 19. that | 24. was |
| 5. dad | 10. hope | 15. name | 20. the | 25. you |

Second Grade Level:

- | | | | | |
|----------|----------|----------|-----------|----------|
| 1. am | 6. dad | 11. hear | 16. make | 21. them |
| 2. baby | 7. eight | 12. is | 17. nice | 22. this |
| 3. blue | 8. fine | 13. it | 18. paid | 23. very |
| 4. can | 9. get | 14. know | 19. right | 24. want |
| 5. could | 10. had | 15. like | 20. seem | 25. you |

Third Grade Level:

- | | | | | |
|------------|-----------|------------|-------------|--------------|
| 1. about | 6. Friday | 11. much | 16. start | 21. together |
| 2. balloon | 7. happen | 12. off | 17. stop | 22. two |
| 3. because | 8. hole | 13. party | 18. suppose | 23. until |
| 4. course | 9. I'm | 14. please | 19. they | 24. went |
| 5. dear | 10. isn't | 15. snow | 20. third | 25. write |

Fourth Grade Level:

- | | | | |
|-------------|--------------|--------------|-------------|
| 1. across | 6. bought | 11. sometime | 16. there |
| 2. answer | 7. cannot | 12. speech | 17. think |
| 3. before | 8. clothes | 13. suppose | 18. tired |
| 4. believe | 9. different | 14. surprise | 19. trouble |
| 5. birthday | 10. easy | 15. tear | 20. true |
| | | 21. where | |
| | | 22. who | |
| | | 23. woman | |
| | | 24. would | |
| | | 25. your | |

Note: Each time a student was tested he/she was given the same list of word items. All the words used in spelling tests were ones identified by the basal series as new words introduced at that particular level and most commonly misspelled at this grade.